UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/561,241	12/19/2005	John Koivukangas	3501-1109	6230

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/561,241	KOIVUKANGAS ET AL.
	Examiner	Art Unit
	Helene Bor	3768

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 December 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *36-68* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *36-68* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 December 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>03/20/2006 & 12/19/2005</u>.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Acknowledgement of Preliminary Amendments

1.   For the record, acknowledgement is made of the applicant's preliminary

amendments to the specification and the claims under 37 CFR 1.115. The

amendments to the specifications are also acknowledged. In addition, it is

acknowledged that applicant cancelled claims, 1-35. Under examination are the newly

added claims, 36-68.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3.   Claim 36-37, 43-54 & 60-68 are rejected under 35 U.S.C. 102(e) as being

anticipated by Bitter'250 et al. (US Patent Application No. 2005/00228250 A1).

Claim 36: Bitter'250 teaches a method for navigating in real time in a three dimensional

medical image model, the method comprising displaying an orientation view of the

medical image model on a display (Figure 3, Element 31 & Figure 19). Bitter'250

teaches a method comprising adjusting a location on the displayed orientation view of

the medical image model based on detected movement of a pointing device in relation

to a worksurface for selecting a navigation point (Page 8, Para 0116). Bitter'250

teaches a method comprising rotating the displayed orientation view on the display as

the location on the orientation view is adjusted based on the detected movement of the

pointing device in relation to the worksurface (Page 8, Para 0116). Bitter'250 teaches a

method for locking the current location on the orientation view as the navigation point

based on detected control command from the pointing device; displaying an inside view

related to the navigation point into the medical image model when the navigation point

is locked; and adjusting viewing direction to the inside view of the medical image model

based on detected changes in orientation of the pointing device in relation to the

worksurface (Page 7, Para 0103).

Claim 37/36: Bitter'250 teaches a method, wherein the orientation view is a surface

view of the medical image model (Page 3, Para 0042).

Claim 43/36: Bitter'250 teaches a method, wherein the pointing device comprises an

adjusting device and the method further comprising adjusting different parameters of the

medical image model by the adjustment device (Claim 15 & 16).

Claim 44/43/36: Bitter'250 teaches a method, the method further comprising adjusting

the parameters independently of the orientation of the pointing device by the adjustment

device (Page 3, Para 0037 & 0042).

Claim 45/43/36: Bitter'250 teaches a method, wherein the parameters that are

adjusted by the adjustment device are used for proceeding the inside view deeper into

the medical image model or for adjusting transparency, contrast and/or threshold of the

medical image model (Page 7, 0102 & Figure 8, Element 125a).

Claim 46/36: Bitter'250 teaches a method, wherein the inside view of the medical

image model comprises one or more medical image slices or other reconstructions and

the adjusting of the viewing direction to the inside view of the medical image model

comprises rendering of the medical image slices with respect to the navigation point

related to the orientation view of the medical image model (Page 3, Para 0042).

Claim 47/46/36: Bitter'250 teaches a method, the method further comprising

generating said one or more medical image slices from two-dimensional image data

(Page 5, Para 0093).

Claim 48/46/36: Bitter'250 teaches a method, the method further comprising orienting

the rendered medical image slices or other reconstructions in relation to the detected

orientation of the pointing device in relation to the worksurface (Page 3, Para 0042).

Claim 49/46/36: Bitter'250 teaches a method, wherein the rendered medical image

slices are three orthogonal planes, one of the planes being perpendicular with the axis

oriented in relation to the detected orientation of the pointing device (Page 5, Para

0092).

Claim 50/36: Bitter'250 teaches a method, wherein adjusting the location on the

displayed orientation view of the medical image model comprises synchronously

rotating a viewpoint to the orientation view of the medical image model on the display

(Page 3, Para 0042).

Claim 51/36: Bitter'250 teaches a method, the method further comprising recording

data related to the navigated three-dimensional medical image model to a memory

(Page 2, Page 0035).

Claim 52/51/36: Bitter'250 teaches a method, wherein the recorded data comprises

one or more images, audio, video, annotation data or any combination thereof (Claim 27, 30 & 33).

Claim 53: Bitter'250 teaches an apparatus for navigating in real time in a three dimensional medical image model, the method comprising displaying an orientation view of the medical image model on a display (Figure 3, Element 31 & Figure 19). Bitter'250 teaches an apparatus comprising adjusting a location on the displayed orientation view of the medical image model based on detected movement of a pointing device in relation to a worksurface for selecting a navigation point (Page 8, Para 0116). Bitter'250 teaches an apparatus comprising rotating the displayed orientation view on the display as the location on the orientation view is adjusted based on the detected movement of the pointing device in relation to the worksurface (Page 8, Para 0116). Bitter'250 teaches an apparatus for locking the current location on the orientation view as the navigation point based on detected control command from the pointing device; displaying an inside view related to the navigation point into the medical image model when the navigation point is locked; and adjusting viewing direction to the inside view of the medical image model based on detected changes in orientation of the pointing device in relation to the worksurface (Page 7, Para 0103).

Claim 54/53: Bitter'250 teaches an apparatus, wherein the orientation view is a surface view of the medical image model (Page 3, Para 0042).

Claim 60/53: Bitter'250 teaches an apparatus, wherein the pointing device comprises an adjusting device and the method further comprising adjusting different parameters of the medical image model by the adjustment device (Claim 15 & 16).

Claim 61/60/53: Bitter'250 teaches an apparatus, the method further comprising

adjusting the parameters independently of the orientation of the pointing device by the

adjustment device (Page 3, Para 0037 & 0042).

Claim 62/60/53: Bitter'250 teaches an apparatus, wherein the parameters that are

adjusted by the adjustment device are used for proceeding the inside view deeper into

the medical image model or for adjusting transparency, contrast and/or threshold of the

medical image model (Page 7, 0102 & Figure 8, Element 125a).

Claim 63/53: Bitter'250 teaches an apparatus, wherein the inside view of the medical

image model comprises one or more medical image slices or other reconstructions and

the adjusting of the viewing direction to the inside view of the medical image model

comprises rendering of the medical image slices with respect to the navigation point

related to the orientation view of the medical image model (Page 3, Para 0042).

Claim 64/63/53: Bitter'250 teaches an apparatus, the method further comprising

orienting the rendered medical image slices or other reconstructions in relation to the

detected orientation of the pointing device in relation to the worksurface (Page 3, Para

0042).

Claim 65/63/53: Bitter'250 teaches an apparatus, wherein the rendered medical image

slices are three orthogonal planes, one of the planes being perpendicular with the axis

oriented in relation to the detected orientation of the pointing device (Page 5, Para

0092).

Claim 66/53: Bitter'250 teaches an apparatus, wherein adjusting the location on the

displayed orientation view of the medical image model comprises synchronously

rotating a viewpoint to the orientation view of the medical image model on the display

(Page 3, Para 0042).

Claim 67/53: Bitter'250 teaches an apparatus, the method further comprising recording

data related to the navigated three-dimensional medical image model to a memory

(Page 2, Page 0035).

Claim 68/67/53: Bitter'250 teaches an apparatus, wherein the recorded data comprises

one or more images, audio, video, annotation data or any combination thereof (Claim

27, 30 & 33).

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

5.   The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

    1.   Determining the scope and contents of the prior art.
    2.   Ascertaining the differences between the prior art and the claims at issue.
    3.   Resolving the level of ordinary skill in the pertinent art.
    4.   Considering objective evidence present in the application indicating
            obviousness or nonobviousness.

6.   Claim 38-42 & 55-59 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Bitter'250 et al. (US Patent Application No. 2005/00228250 A1) and further in view

of Lapstun'591 (US Patent No. 6,737,591 B1).

Claim 38/36: Bitter'250 fails to teach the pen. However, Lapstun'591 teaches a method wherein the pointing device is a pen, a stylus or a pen-like instrument and the worksurface is a tablet surface (Col. 2, Line 26-28 & 43-47). It would have been obvious to one of ordinary skill in the art to combine the teachings of Bitter'250 and Lapstun'591 in order to improve portability and interaction with the computer and information (Col. 2, Line 1-6).

Claim 39/38/36: Bitter'250 fails to teach the pen. However, Lapstun'591 teaches a method, wherein the detected changes in orientation used in adjusting the viewing direction to the inside view of the medical image model comprise the detected change of a tilt angle and change of orientation between the pen and the tablet surface (Col. 2, Line 26-28). It would have been obvious to one of ordinary skill in the art to combine the teachings of Bitter'250 and Lapstun'591 in order to improve portability and interaction with the computer and information (Col. 2, Line 1-6).

Claim 40/38/36: Bitter'250 fails to teach the pen. However, Lapstun'591 teaches a method further comprising detecting the movement of the pointing device in relation to the worksurface on the basis of changes of the pen tip position on the tablet surface (Col. 2, Line 26-28 & & 41-44). It would have been obvious to one of ordinary skill in the art to combine the teachings of Bitter'250 and Lapstun'591 in order to improve portability and interaction with the computer and information (Col. 2, Line 1-6).

Claim 41/38/36: Bitter'250 fails to teach the pen. However, Lapstun'591 teaches a method further comprising detecting the movement of the pointing device in relation to the worksurface on the basis of changes of the pen tilt angle in relation to the tablet

surface (Col. 2, Line 26-28 & 41-44). It would have been obvious to one of ordinary skill in the art to combine the teachings of Bitter'250 and Lapstun'591 in order to improve portability and interaction with the computer and information (Col. 2, Line 1-6).

Claim 42/38: Bitter'250 does teach using the mouse wheel to zoom (Page 8, Para 0116). Bitter'250 fails to teach the pen. However, Lapstun'591 teaches a method further comprising proceeding the inside view of the medical image model deeper into the medical image model depending on the pressure between the pen and the tablet surface (Col. 18, Line 29-35). It would have been obvious to one of ordinary skill in the art to combine the teachings of Bitter'250 and Lapstun'591 in order to improve portability and interaction with the computer and information (Col. 2, Line 1-6).

Claim 55/54/53: Bitter'250 fails to teach the pen. However, Lapstun'591 teaches an apparatus wherein the pointing device is a pen, a stylus or a pen-like instrument and the worksurface is a tablet surface (Col. 2, Line 26-28 & 43-47). It would have been obvious to one of ordinary skill in the art to combine the teachings of Bitter'250 and Lapstun'591 in order to improve portability and interaction with the computer and information (Col. 2, Line 1-6).

Claim 56/55/54/53: Bitter'250 fails to teach the pen. However, Lapstun'591 teaches an apparatus, wherein the detected changes in orientation used in adjusting the viewing direction to the inside view of the medical image model comprise the detected change of a tilt angle and change of orientation between the pen and the tablet surface (Col. 2, Line 26-28). It would have been obvious to one of ordinary skill in the art to combine the teachings of Bitter'250 and Lapstun'591 in order to improve portability and

interaction with the computer and information (Col. 2, Line 1-6).

Claim 57/55/53: Bitter'250 fails to teach the pen. However, Lapstun'591 teaches an apparatus further comprising detecting the movement of the pointing device in relation to the worksurface on the basis of changes of the pen tip position on the tablet surface (Col. 2, Line 26-28 & & 41-44). It would have been obvious to one of ordinary skill in the art to combine the teachings of Bitter'250 and Lapstun'591 in order to improve portability and interaction with the computer and information (Col. 2, Line 1-6).

Claim 58/55/53: Bitter'250 fails to teach the pen. However, Lapstun'591 teaches an apparatus further comprising detecting the movement of the pointing device in relation to the worksurface on the basis of changes of the pen tilt angle in relation to the tablet surface (Col. 2, Line 26-28 & 41-44). It would have been obvious to one of ordinary skill in the art to combine the teachings of Bitter'250 and Lapstun'591 in order to improve portability and interaction with the computer and information (Col. 2, Line 1-6).

Claim 59/55/53: Bitter'250 does teach using the mouse wheel to zoom (Page 8, Para 0116). Bitter'250 fails to teach the pen. However, Lapstun'591 teaches an apparatus further comprising proceeding the inside view of the medical image model deeper into the medical image model depending on the pressure between the pen and the tablet surface (Col. 18, Line 29-35). It would have been obvious to one of ordinary skill in the art to combine the teachings of Bitter'250 and Lapstun'591 in order to improve portability and interaction with the computer and information (Col. 2, Line 1-6).

Conclusion

7.   The prior art made of record and not relied upon is considered pertinent to
applicant's disclosure.

    a.   Arcas, Blaise Aguera   Methods and apparatus for navigating an
image 09/22/2005   US 20050206657 A1

    b.   Balakrishnan; Ravin et al. Three dimensional input system using tilt
09/05/2000   US 6115028 A

    c.   Carl, Stewart R. et al.   Processing pose data derived from the pose of
an elongate object   08/04/2005   US 20050168437 A1

Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Helene Bor whose telephone number is 571-272-2947.
The examiner can normally be reached on M-F 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Eleni Mantis-Mercader can be reached on 571-272-4740. The fax phone
number for the organization where this application or proceeding is assigned is 571-
273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

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Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

hcb

ELENI MANTIS MERCADER
SUPERVISORY PATENT EXAMINER